The Lepidopterological Society of Japan

蝶と蛾 *Trans. lepid. Soc. Japan* **52** (1): 37-44, December 2000

Establishment of a new genus *Vietomartyria* (Lepidoptera, Micropterigidae) for *Paramartyria expeditionis* Mey[1)]

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Abstract A new genus, *Vietomartyria* Hashimoto & Mey, gen. nov., is described for *Paramartyria expeditionis* Mey, 1997. The external characters examined are compared and evaluated among the Northern Hemisphere so-called *Sabatinca*-group.

Key words Micropterigidae, new genus, *Vietomartyria* gen. nov., *Paramartyria expeditionis*, Vietnam.

One of us, Mey, described a new species of the genus *Paramartyria* Issiki, 1931, *P. expeditionis*, from the northern part of Vietnam in 1997. As indicated in the original description, this species was unique among the previously known species of the genus in the following characters; each flagellomere with a long basal stalk, absence of foretibial epiphysis, and a large lower part of the 10th segment of the male genitalia. Hashimoto recently had an opportunity to examine a male specimen of this species collected from near the type locality. A detailed examination of the external characters led us to the following results. 1. Much of the similarity between *P. expeditionis* and other *Paramartyria* species is plesiomorphic. 2. When *P. expeditionis* is included into *Paramartyria*, all the Northern Hemisphere species belonging to the so-called *Sabatinca*-group should be united into a single genus. 3. *P. expeditionis* shares a few unique characters with members of the genera *Palaeomicroides* Issiki and *Neomicropteryx* Issiki. 4. *P. expeditionis* has autapomorphic characters.

Below, we describe a new genus *Vietomartyria* for *P. expeditionis* with a redescription of the male genitalia and a description of the female genitalia.

All specimens examined are kept in the collections abbreviated in the text as follows:

NSMT: Department of Zoology, National Science Museum, Tokyo, Japan,
ZMHB: Museum für Naturkunde, Zentralinstitut der Humboldt-Universität, Berlin, Germany.

Vietomartyria gen. nov. (Figs 1-11)

Type species: *Paramartyria expeditionis* Mey, 1997.

Diagnosis. *Vietomartyria* is a unique genus in the family Micropterigidae with a long basal stalk of each flagellomere and a gonopore being dorsal 1/2 to 3/4 of the aedeagus, which are

[1)] This study was supported in part by the Grant-in-aid No. 09041167 for Field Research of the Monbusho International Scientific Research Program, Japan.

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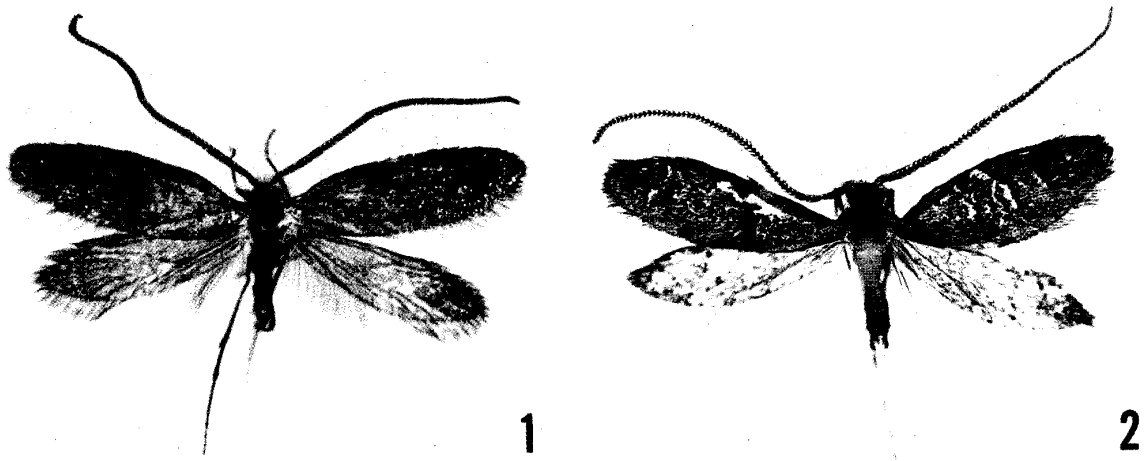

Figs 1–2. *Vietomartyria expeditionis* (Mey). 1. Male, holotype. 2. Male, third specimen.

the autapomorphies of the genus. This genus belongs to the so-called *Sabatinca*-group. The position of the primary R fork of the forewing, which is equal to the Sc fork or more distal than the Sc fork, is shared with the genus *Palaeomicroides* Issiki, 1931, from which it is distinguishable by the presence of a radial cell in the fore- and hindwings.

Description. Head. Head capsule shining and without microtrichia on genal area; frons and vertex densely covered with orange hairs. Compound eye medium-sized, interocular index (Davis, 1975) 0.5, supraocular index (Kristensen & Nielsen, 1979) 0.4. Interocellar suture distinct. Epipharyngal armature (Fig. 3) largely reduced. Labial palpus two-segmented. Maxillary palpus 5-segmented; 4th segment bending; length ratio of each segment 1 : 1 : 2.5 : 2.9 : 1.5. Antenna long, almost as long as forewing in male and about 3/4 in female; scape largest, longer than wide, concave on inner surface; pedicel globular; flagellum distinctly moniliform, 55, 56 and 61 segments in male and 42 segments in female; each flagellomere (Fig. 4) with long stalks at both ends except terminal two or three segments.

Thorax. Foretibia (Fig. 5) without epiphysis. Wing venation as in Fig. 9; a position of primary R fork equal to Sc fork or more distal than Sc fork in forewing (Fig. 6); radial cell present in fore- and hindwings; R_4 and R_5 long stalked; terminal tip of Sc_1 in hindwing vestigial.

Abdomen. 5th sternal gland (Fig. 7) reduced; orifice a slender slit. 8th segment without sternal sclerotization in male, similar to preceding segments in female.

Male genitalia (Figs 8, 10). 9th segment forming a complete ring, ventrally expanded anteriorly; posterior margin gradually expanded ventro-posteriorly in lateral view. Gonopod (valva) largely sclerotized, with an obtuse basal projection ventro-internally, upper part of which has minute granules, ventral margin arched; terminal 1/3 obliquely expanding upwards, with a process extending medially at upper apical corner. Median plate broadest just behind middle, with an acute anterior end. Phallobase as long as aedeagus; aedeagus covered with a lot of serrate minute processes at basal 1/4 to apex ventro-laterally and at 1/2 to apex dorsally, with very narrow sclerites extending from base to gonopore at both sides; gonopore (Figs 8, 10g) opening longitudinally at dorsal 1/2 to 3/4 of aedeagus, bordered by radial folds. 10th tergite large at proximal part, with a bilobed terminal part, synscleritous with high lateroventral anal cone sclerites (gnathos *sensu* Issiki, 1931). Anal cone sclerites with many small teeth on upper apical margin and a larger lateral process before apex.

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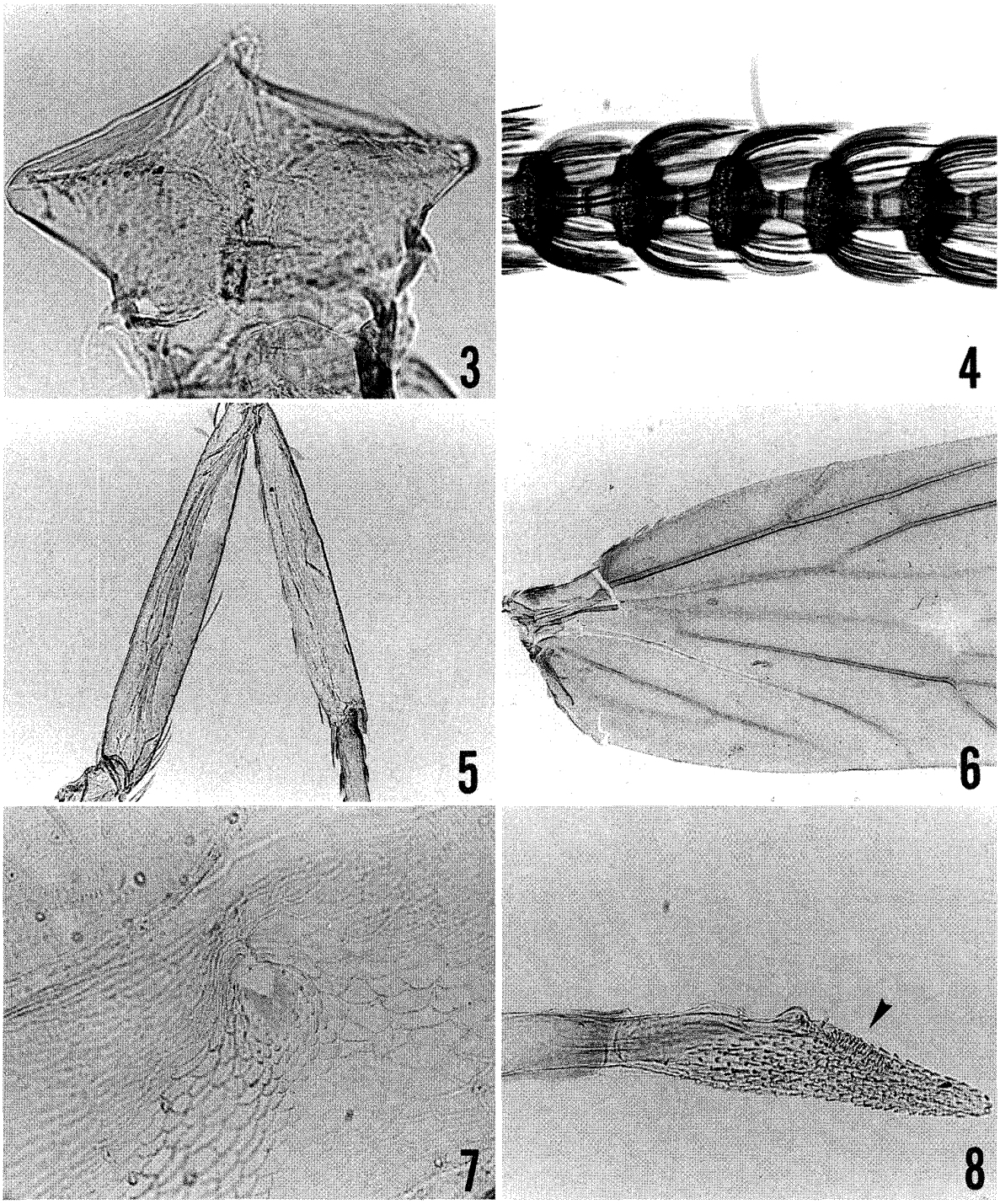

Figs 3–8. *Vietomartyria expeditionis* (Mey). 3. Epipharynx. 4. Mid part of flagellum segments. 5. Forefemur and foretibia. 6. Basal half of forewing, with scales removed. 7. 5th abdominal gland. 8. Aedeagus.

Female genitalia (Fig. 11). 9th segment ring-shaped, ventrally expanded slightly forwards. 10+11th segment consisting of a pair of well sclerotized lateral plates; lateral plate longer than high, swollen dorso-basally, tapering ventro-caudally, with minute needle-like projections along dorso-basal margin and with finger-shape protrusions along ventral and terminal margins, each of them with an apical hair; a basal swollen part of lateral plate surrounded with minute setae. Corpus bursae membranous, elongate, globular at anterior end, slightly

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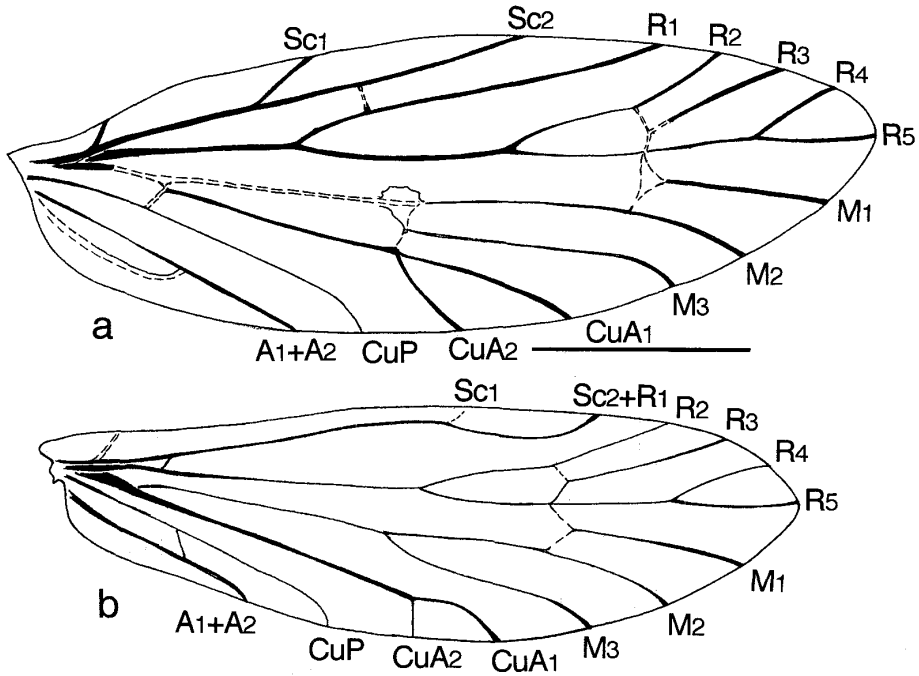

Fig. 9. Wing venation of *Vietomartyria expeditionis* (Mey) (a: forewing, b: hindwing). Scale 1.0 mm.

concave before genital chamber dorsally; signum lacking. Basal part of ductus spermathecae concave, almost hexagonal enclosed with thickened fold.

Derivation of the name. *Vietomartyria* is selected for its similarity to the genera *Paramartyria* and *Epimartyria*, and refers to the presence in *Vietnam*.

Gender. Feminine.

Comparative remarks. *Vietomartyria* phenetically resembles *Paramartyria* in the wing venation and the male genitalia, but differs from it by the form of each flagellomere (apical part of each flagellomere swollen in *Paramartyria*), the number of flagellum segments (about 43 segments in male, about 35 segments in female in *Paramartyria*), absence of the foretibial epiphysis (present in *Paramartyria*), position of the primary R fork (basad from Sc fork in *Paramartyria*), and by the posterior margin of the 9th segment of the male genitalia (more or less concave in lateral view in *Paramartyria*). Similarity in the male genitalia between *Vietomartyria* and *Paramartyria* seems to be plesiomorphous in the Northern Hemisphere genera, because the antero-ventrally produced 9th ring and bilobed 10th tergite are considered to be the ground plan of the so-called *Sabatinca*-group of genera (Kristensen, 1984). Presence of a radial cell in both wings is also a primitive condition in the Northern Hemisphere genera. A reduced epipharyngal armature, which is probably a derived character, is shared between *Vietomartyria* and *Paramartyria*, but is also present in the genus *Neomicropteryx* Issiki, 1931.

Absence of foretibial epiphysis of *Vietomartyria* is unusual in the family Micropterigidae and the same condition is also observed in *Epimartyria* Walsingham, 1888 and *Neomicropteryx*. *Epimartyria* shows several primitive features in the Northern Hemisphere so-called *Sabatinca* group, whereas *Neomicropteryx* has many specialized characters. Therefore it is probable that this character occurred in parallel among the Northern Hemisphere genera.

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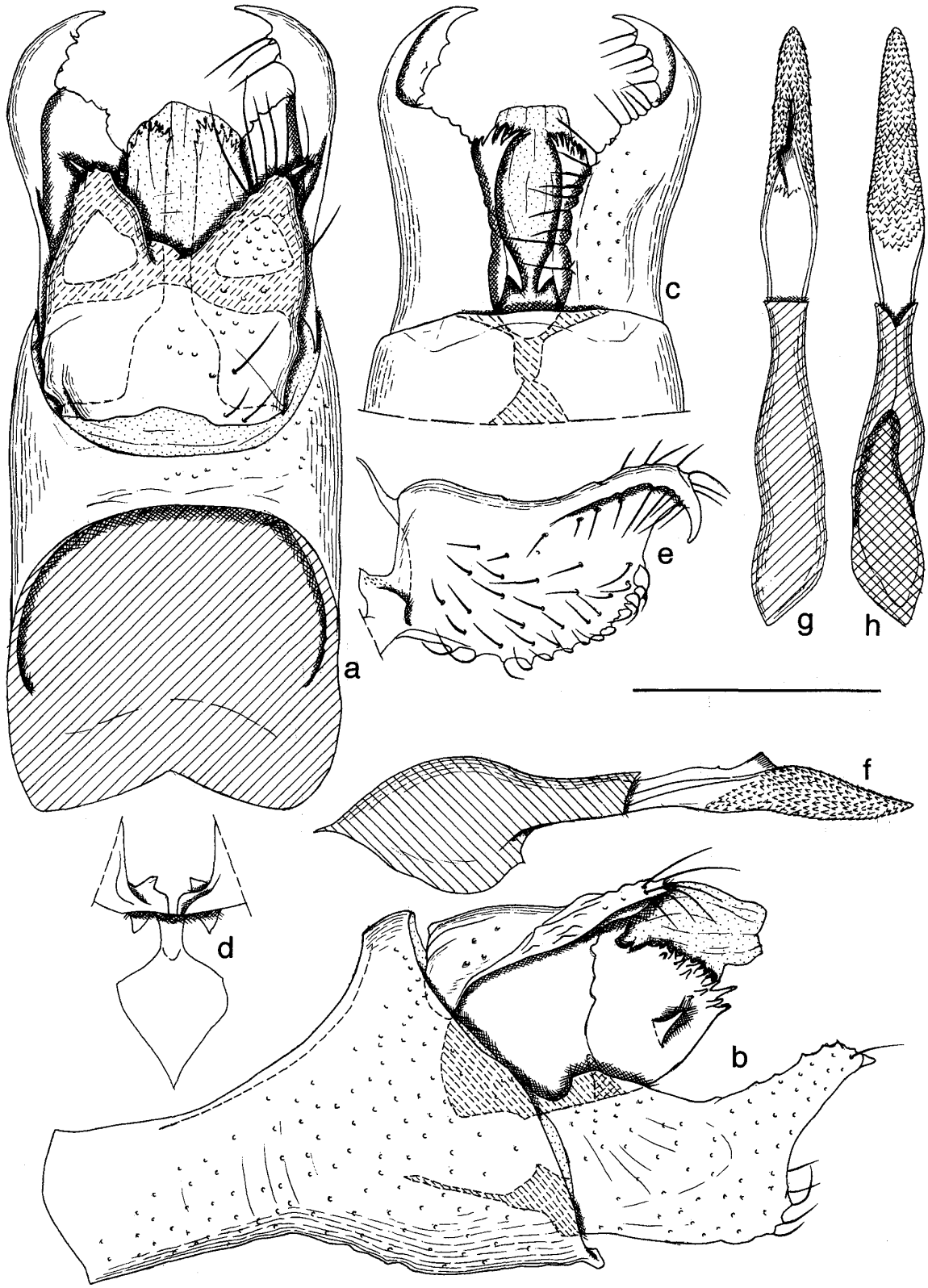

Fig. 10. Male genitalia of *Vietomartyria expeditionis* (Mey) (a: dorsal view, with phallus removed, b: *ditto*, lateral view, c: caudal half in ventral view, d: median plate, e: gonopod, f: phallus in lateral view, g: *ditto*, dorsal view, h: *ditto*, ventral view). Scale 0.25 mm.

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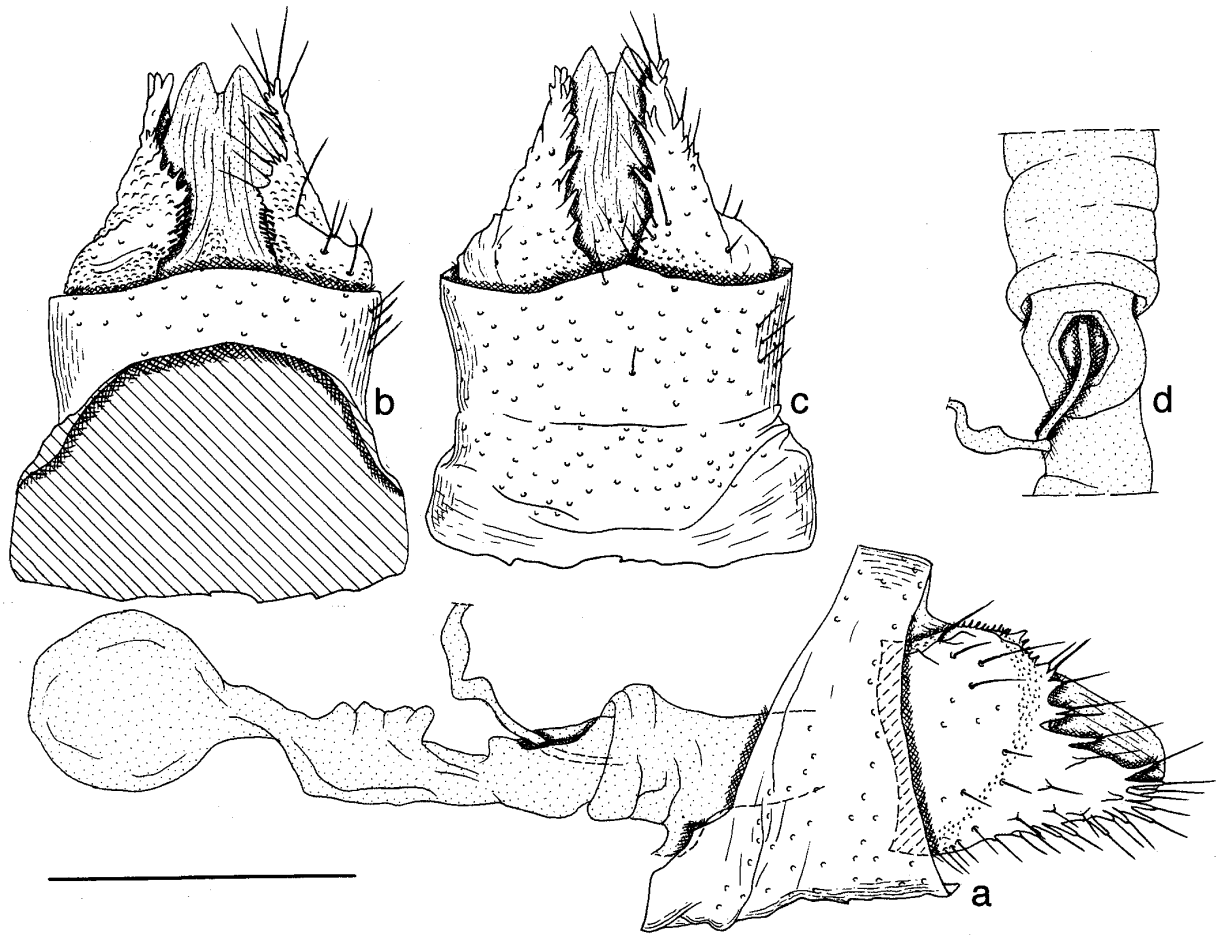

Fig. 11. Female genitalia of *Vietomartyria expeditionis* (Mey) (a: lateral view, b: 9th ring and 10+11 segment in dorsal view, c: *ditto*, ventral view, d: basal part of ductus spermathecae). Scale 0.25 mm.

Among the Northern Hemisphere genera, *Vietomartyria* is closely allied to the genera *Palaeomicroides* and *Neomicropteryx* on account of the form of each flagellomere and the number of flagellum segments (59–64 segments in male, 42–46 segments in female in *Palaeomicroides*, and about 70 segments in male, about 50 segments in female in *Neomicropteryx*). An increasing number of flagellum segments is one of the evolutionary trends in the Northern Hemisphere genera. *Vietomartyria* is easily distinguishable from them by the long basal stalk of each flagellomere and the male genital structures. The relationship among them is still not established. It is, however, the subject of a forthcoming study performed by Hashimoto.

The gonopore of the male genitalia of Micropterigidae usually opens at the terminal end of the aedeagus, but in *Vietomartyria* it opens longitudinally at the dorsal 1/2 to 3/4 of the aedeagus. This is a notable character in the family except for *Epimartyria*, in which the aedeagus is divided into dorsal and ventral long parts.

In the female genitalia, useful characters characterizing this genus can not be recognized. However, it is probable that absence of signum in the corpus bursae is one of the characteristics of *Vietomartyria*. Previously known females of *Paramartyria* species except *P. immaculatella* have distinct signa (4 pieces of trident sclerites) in the corpus bursae. This character is also found in the genera *Epimartyria*, *Palaeomicroides*, *Neomicropteryx* (in only

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one species) and *Sabatinca sensu* Minet (1985). Therefore it is considered that absence of a signum in *Vietomartyria*, *P. immaculatella* and in most species of *Neomicropteryx* is a secondary condition and has evolved in parallel among them.

Vietomartyria expeditionis (Mey), **comb. nov.**

Paramartyria expeditionis Mey, 1997, *Entomofauna* (Suppl.) **9**: 14, pl. 1, figs 1-5.

Forewing length 3.8 mm.

Male genitalia. Dorsal part of 9th segment very short (about 1/10 length of ventral part), weakly sclerotized near dorsal anterior margin. Gonopod relatively broad. Basal half of lateral wall of 10th tergite fuscous, rather strongly sclerotized; apical half paler, weakly sclerotized. Aedeagus slender.

Female genitalia. 9th segment sclerotized, short in dorsal part (about 1/4 length of ventral part), slightly concave at both sides. Anterior part of corpus bursae globular, covered with minute wrinkles.

Materials examined. 1 ♂, holotype, "Nord-Vietonam, Fan-si-pan Mt., 1,600 m, 29. III. 1995, W. Mey leg." (ZMHB); 1 ♀, allotype, same data as holotype (ZMHB); 1 ♂, Vietnam, Ban Khoang, 1,400 m, Sa Pa, Lao Cai Province, 3-5. III. 1999, A. Shinohara leg. (NMST).

Biology. Unknown.

Distribution. Vietnam (northern mountainous areas).

Acknowledgments

We express our hearty thanks to Prof. Dr N. P. Kristensen, Zoological Museum, University of Copenhagen, Copenhagen, and Dr M. J. Scoble, The Natural History Museum, London, for their critical reading of the manuscript and their useful suggestions. We also thank Dr M. Owada and Dr A. Shinohara, National Science Museum, Tokyo, for allowing us to examine useful specimen of the species.

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摘　　要

Paramartyria expeditionis (コバネガ科) を基に新属 *Vietomartyria* の創設 (橋本里志・Wolfram Mey)

著者の一人，Mey は 1997 年にベトナムから *Paramartyria expeditionis* を記載したが，本種は触角の構造や前脛節の葉状片の欠如など，*Paramartyria* 属の他の既知種とは異なり特異な存在であった．橋本は 1999 年に採集された雄標本を検する機会を持ち，再検討した結果，本種は *Paramartyria* 属よりは *Palaeomicroides* 属や *Neomicropteryx* 属に近縁であると考えられたので，この種を基に新属を創設した．

Vietomartyria gen. nov.

Type species: *Paramartyria expeditionis* Mey, 1997

この属は，触角鞭節の各節基部に長い柄を有すること，雄の生殖口が末端から離れているという固有新形質を有する．

本属は表面的に *Paramartyria* 属に似ているが，類似の多くは原始的な特徴であり，触角の鞭節の形状，節数などの形質において *Paramartyria* 属とは異にしている．また，本属は *Neomicropteryx* 属と *Palaeomicroides* 属に近縁であると考えられるが，両属とは雄交尾器の構造で容易に区別される．これら 3 属間の姉妹群関係については，今後の課題である．

(Accepted June 28, 2000)

Published by the Lepidopterological Society of Japan,
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